



# *Homeowner's Guide to Drainage*



*City of Marietta, Georgia  
Department of Public Works*

*205 Lawrence Street  
Marietta, GA 30060*

Drainage and flooding problems in and around your home can be a costly and damaging nuisance. While you are developing your lot or landscaping your yard, you can inadvertently create flooding and drainage problems for you and your neighbors.

Fortunately following the guidelines listed in this booklet can often prevent most of these problems. These guidelines are based on actual problems encountered, and are intended to provide a brief overview of typical situations.

The guidelines are general in nature and may not fit all situations. If you have an unusual problem or have a specific question please contact the City of Marietta Department of Public Works – Engineering Division:

Richard E. King, CPSS, CPESC, Civil Engineer at 770-794-8110

James A. Wilgus, P.E., City Engineer / Asst Public Works Director, 770794-5648

Daniel J. Conn, P.E., Public Works Director, 770-794-5658

Municipal authority to perform drainage work on private property is clear where the drainage problem is caused by the manner in which the City's streets drain, or in situations where the drainage adversely affects the City's streets or other public improvements. However, state statute is also clear and does not impose "any obligation or duty upon a municipality and shall not create any additional rights for the benefit of any owner of public or private property." The City will not undertake drainage work, or tree or sediment removal in a channel, on private property solely for the benefit of the private property owner or owners. There must be a general and proper municipal purpose to be served before the City will commit public resources to a project.

The consequences of excessive stormwater runoff can be immediate and devastating, resulting in flooding and damages to lower or adjacent properties. Generally, stormwater runoff can be divided into two categories: surface water flow and natural watercourses. Surface water flow is defined as water that falls to the ground from the sky, diffuses as overland flow on the surface of the land, and follows no defined course or channel. Surface water can also include that which arises from springs. Some or all surface water flow may be lost by being dispersed over the ground through infiltration and evaporation.

A natural watercourse (including streams, drainage channels) is a channel with a defined bed and banks through which water normally passes as a body or stream during seasons and at times when streams in the region usually flow. Alterations to a natural watercourse, such as construction of conduits / pipes or other improvements in the stream bed, do not generally affect its status as a natural watercourse – when designed and installed properly per State Law and local Ordinances.

Many of the controversies over water issues have arisen when excessive water flowing from one owner's property is allowed to physically invade and damage another's property. Quite often these drainage issues arise in which no City drainage structures or easements are involved. As subdivisions mature, it is important to keep in mind that drainage patterns change. Over time, fences, swimming pools, flowerbeds, and sheds are built. Trees and bushes and other vegetation get larger and larger. Without proper homeowner planning and maintenance, all of the above mentioned items can adversely affect stormwater runoff. Property owners should be aware that they may have legal rights and responsibilities in regard to stormwater runoff entering and exiting their property. Such rights and responsibilities are almost entirely private in nature, meaning that the City may lack jurisdiction to intervene in certain matters that are more properly handled in a civil context by and between adjoining property owners. Property owners who are concerned about excessive water flow in or around their property are encouraged to ask their homeowner's insurance representative about the availability of flood insurance which may be available for homes regardless of the proximity to a flood zone.

### **STORM MAGNITUDES / FREQUENCIES**

As an example, the term "25 year storm" is used in an attempt to simplify the definition of a rainfall event that statistically has a 4 percent chance of occurring in any given year (see below). In other words, any given storm event is expected to be less than the 25 year storm 96% of the time. However, storms of greater than a 25 year storm event can happen more than once in any given year. For instance:

#### **Recurrence Intervals and Probabilities of Occurrences**

<b>Recurrence Interval</b>	<b>Probability of occurrence</b>	<b>Percent chance of occurrence</b>
<b><u>In years</u></b>	<b><u>In any given year</u></b>	<b><u>In any given year</u></b>
500	1 in 500	0.2
100	1 in 100	1
50	1 in 50	2
25	1 in 25	4
10	1 in 10	10
5	1 in 5	20
2	1 in 2	50

## **TREES AND DEBRIS IN DRAINAGE CHANNELS**

The City of Marietta Department of Public Works receives many complaints each year requesting assistance to remove fallen trees and brush along stream banks on and through private property. Please also see Residential Property Owner's Responsibilities In Stream Buffers which follows.

We wish to bring to your attention that removal of trees that have fallen are the responsibility of the individual homeowner on which that portion of the tree rests. For instance, the roots and trunk may be on one property, and the upper branches on another. The City cannot come onto private property to do work. However, it is vitally important that our streams and channels of flow remain open and unimpeded so flooding can be kept to the minimum. If channels are blocked, flows will back up and result in increased flooding and possible liability to the homeowner.

The City of Marietta Public Works Department would also like to make you aware that the City has been conducting a Storm Water Monitoring Program in neighborhoods since early 2000. The focus of this monitoring program is to improve the water quality of Georgia's lakes and streams by eliminating non-storm water discharges that are entering into the storm drainage system. We work closely with the Cobb County Stormwater Program in this respect, since every stream that begins in Marietta flows into Cobb County.

Some examples of non-storm water discharges that are not acceptable under current law include floor drains in buildings, washing machine discharges, commercial and residential car washing runoff, used motor oil disposal, paint disposal, and any sanitary sewer connections. **Please do not blow or deposit leaves and debris, including grass clippings, into storm sewers, streams / channels, or adjacent to storm drains where pollution of stormwater will occur. "Only Rain Down The Drain"**

If you would like to get additional information about this program and the City's NPDES Stormwater Discharge Permit, please visit the Public Works - Engineering Division section of the City's website at <http://www.mariettaga.gov/departments/pubworks/stormwater.aspx>.

## **FREQUENTLY ASKED QUESTIONS**

### **What is stormwater?**

Stormwater is the water from melting snow or falling rain. Impervious surfaces such as rooftops, driveways, and roads prevent water from being absorbed into the ground. The portion of water that is not absorbed into the ground is what is known as stormwater runoff.

This water in motion picks up and carries a wide variety of pollutants and litter which flows into our storm drains and eventually empties directly into our waterways, rivers, lakes, and oceans. Unlike household wastewater, stormwater is not treated. This means the everyday has a direct impact on our local water quality.

## Why is stormwater management important?

Water that is not absorbed into the ground flows downstream. If not managed, this excess flow can cause flooding problems. Also, water from rain and irrigation carries fertilizers, pesticides, soil, and other debris off lawns and streets into neighborhood storm drains that lead directly to our streams, rivers and lakes. Traditional stormwater management has focused on removing quantities of water from our streets and neighborhoods, with the primary goal being to prevent flooding. But water quality has quickly become an important aspect as well. Stormwater BMPs (Best Management Practices) can help with both quantity and quality concerns.



## **STORMWATER DOS & DON'TS**

### **DOS:**

Keep stormwater facilities (grates, pipe, and culverts, swales) open and clear at all times.

Sod, seed, or mulch exposed soil as soon as possible to prevent soil from entering the stormwater system.

Talk with your neighbors about drainage in your area.

Have downspouts and sump pumps discharge on your property and direct the flow away from the home and property line.

Try to minimize impervious area (sidewalks, patio, pavers, roof etc)

Keep fences out of drainage easements and stormwater facilities.

Install a small concrete flow channel below roof drain outlets and sump pump discharge locations to minimize erosion in these areas.

### **DON'TS:**

Pour contaminants down the storm water drains.

EVER remove grates or manhole lids, not even to remove an obstruction to flow. Only public works personnel are authorized to remove these types of structures for maintenance.

Put grass clippings, leaves, or other yard waste into stormwater facilities (i.e. ditches, channels, swales, drains).

Direct gutters and sump pumps onto neighboring properties or onto your property line.

Construct fences perpendicular to the water flow.

Place dirt, sand, rock, retaining walls, or other construction material in a stormwater facility (grates, pipe and culverts, swale).

Expect stormwater facilities to be completely dry immediately after a rain event.



## **DRAINAGE AROUND YOUR HOME OR PROPERTY**

*It is important to understand that all stormwater facilities have their own limits of capacity, and each swale, ditch, storm sewer etc., at times, may be exceeded during an event. No person or property is ever truly free of the risk of flooding and drainage concerns.*

*How do I tell if I have a potential drainage or flooding problem on my property?*

- Is any part of my house lower than the surrounding ground such that water cannot flow freely away from the house.



- Is your property located within a FEMA mapped floodplain?

Is there a wetland near or on your property?

Are you aware of a relatively high water table in the area?

Does your sump pump run often?

- Is there a dedicated drainage easement on or near your property?
- Is there a natural drainage way (stream or channel) or manmade drainage channel (swale or ditch) on or near your property?
- Is there a stormwater detention basin on or near your property?
- Can roof runoff and sump pump discharge flow safely away from your house?

Does my yard have areas that have settled over time?

***How can I determine if any of the above conditions exist on my property?***

- Safely observe how your property drains during a storm event.
- Look for evidence of flow (erosion, debris), ponding (overgrown vegetation, water-stained walls), or drainage features (grates, drainpipes, storm sewer, culvert) on your property.
- Examine the deed and title of your property for disclosures and restrictions.
- Talk with neighbors and understand their perspectives and experiences with drainage in the area.
- Check the recorded plat for your subdivision and/or lot for Stormwater and/or Drainage Easements. Read their descriptions to understand their purpose and your maintenance responsibility.
- Check the approved grading and improvement plans for your lot or subdivision to understand the required grading for best drainage function in the area.
- Check the FEMA flood insurance rate maps (most current December 16, 2008) for floodplain locations. (Available to view at Public Works – Engineering)



- Check with the City's website or visit the office to view regulations, maps, aerial photos, and records and plans.

*What types of things should I avoid if I have a drainage way, channel, swale etc on my property?*

Here the banks of the stream are lined with grass, which provides some protection for the stream bank but lacks the stability that trees can provide.

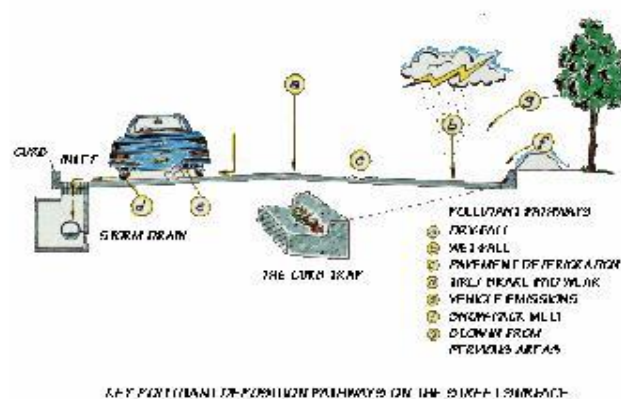


- Avoid crossing drainage ways with your primary access or the only driveway to your home. Avoid diverting drainage ways from their flow path. Typical ordinances require that runoff should enter and depart from property in substantially the same manner as under pre-development conditions. If, for some reason, you must divert flow within your lot, avoid designing channels that turn the water flow more than 45 degrees.
- You must not alter a watercourse without permit approval from the City, State of Georgia, and potentially US Army Corps of Engineers, and certification from a professional engineer that any alterations will not increase flood levels or hazards within, upstream or downstream from the altered portion of the watercourse.
- Do not place structures (i.e. sheds, garages), landscaping walls, trees/bushes, fences, and any debris in these areas. The fewer obstructions in the drainage way the better.
- Keep the area clean from, grass clippings, loose debris, and other items that may restrict water flow or clog drainage features.

***Are there things I need to consider related to drainage if I install a block wall, fence, or other structures?***

- Structures and landscaping built across drainage flow paths or channels can dam up runoff water or divert it, creating some of the most serious flooding problems. Walls, fences, and other structure and materials should avoid encroaching into a drainage area and/or drainage easement. If your lot has a designated building area that limits the developable area, then walls, fences etc should not extend beyond that area. The area outside the building area is often needed for drainage as well as natural open space.
- Consider alternatives to concrete or asphalt-paved surfaces. If you have a choice, consider more porous surfaces such as brick, gravel, wood chips, stone slab, or geo-textile materials. If areas must be paved, keep it to a minimum and direct runoff onto grassy areas and storm sewers. Avoid altering the shape and contouring of the swale.
- Design and construct the landscape topography to facilitate stormwater drainage and infiltration. For example, use low areas to create “rain gardens,” which are landscaped areas planted with wildflowers and other native vegetation that soaks up rainwater.
- Use natural vegetation in your landscaping, which has a deeper root system than turfgrass and, thus, allows for more water infiltration.
- Mulch and plant any exposed soil as soon as possible after construction. Use sediment barriers(silt fencing and/or erosion control matting or blanketing) when necessary. Washed off soil can clog storm sewers/drains over time and cause swales and drainage ways to lose capacity.
- Avoid excessive soil compaction and disturbance to the lot.

- Avoid hooking downspouts/sump pumps directly into the storm sewer system or onto paved surfaces. These should discharge directly on a grassed or planted surface; however, be careful not to discharge directly onto the property line and/or impact neighboring properties. A good rule of thumb is to keep the discharge pipe 40 feet from the property line. City ordinances require direct connection to a storm sewer, so this suggestion may be in conflict with that. Regardless, local ordinance must be followed.



Numerous types of pollutants can enter a stream from the street surface.

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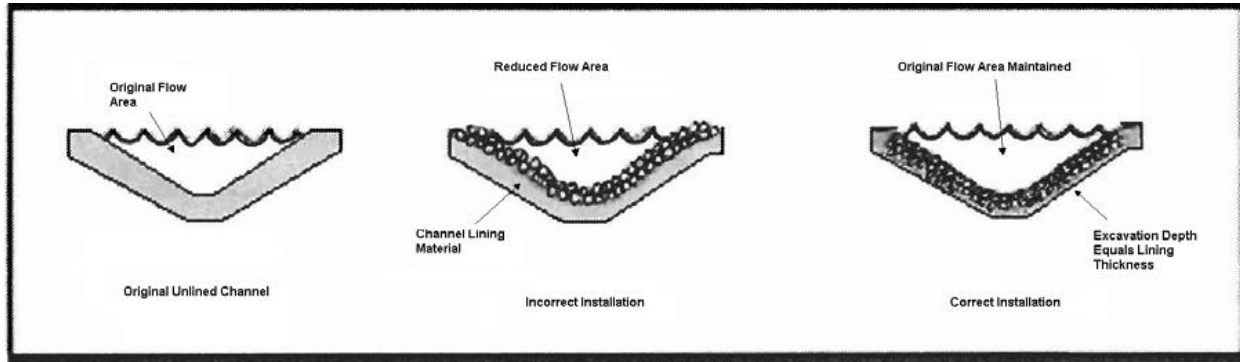
### ***Do I need to excavate before bringing in fill or landscaping material?***

If the material would block or change drainage conditions, then prior to placing the material, the soil in the area to be covered should be excavated (lowered/dug out) and removed to the depth or thickness of the landscaping material being brought in. The excavated material can be hauled off or used for mound building (landscaping) in other parts of the yard as long as:

- The mound or material doesn't cause water to drain toward the house;
- The mound doesn't prevent water from draining away from the house; The extra dirt doesn't

cause added flow or drainage issues for surrounding properties, and

- Avoid altering the shape and control of drainage swales.



**NOTE:** Work near or adjacent to a stream or channel will likely be required to have a Land Disturbance Activity Permit from the City, and possibly a Variance from the Georgia Environmental Protection Division. In some instances, a Permit is required from the US Army Corps of Engineers for work within wetlands.

### **Typical Terminology**

**(BMP) Best Management Practices.** A measure used to control the adverse stormwater related effects of development. BMPs may include structural devices (e.g., swales, filter strips, infiltration trenches, and detention basins) designed to remove pollutants, reduce runoff rates and volumes, and protect aquatic habitats. BMPs may also include nonstructural approaches, such as public education efforts to prevent the dumping of household chemicals into storm drains.

**Channel.** Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainage way, which has a definite bed and bank or shoreline, in or into which surface, groundwater, effluent, or industrial discharges flow either perennially or intermittently.

**Detention Basin.** A constructed structure for the temporary storage of stormwater runoff with a controlled release rate.

**Easement.** A grant by a property owner for the use of a parcel of land by the general public, a corporation, or a certain person or persons for a specific purpose or purposes.

**Erosion.** The process whereby soil is detached by the action of water or wind.

**Filter Strips.** Densely planted strips of ground used primarily to help filter and reduce runoff from paved areas such as roadways, small parking lots, play grounds, etc. This method uses natural sedimentation to filter pollutants.







*Above: dry swale for filtration;*

*Below: Wet swale for water quality*

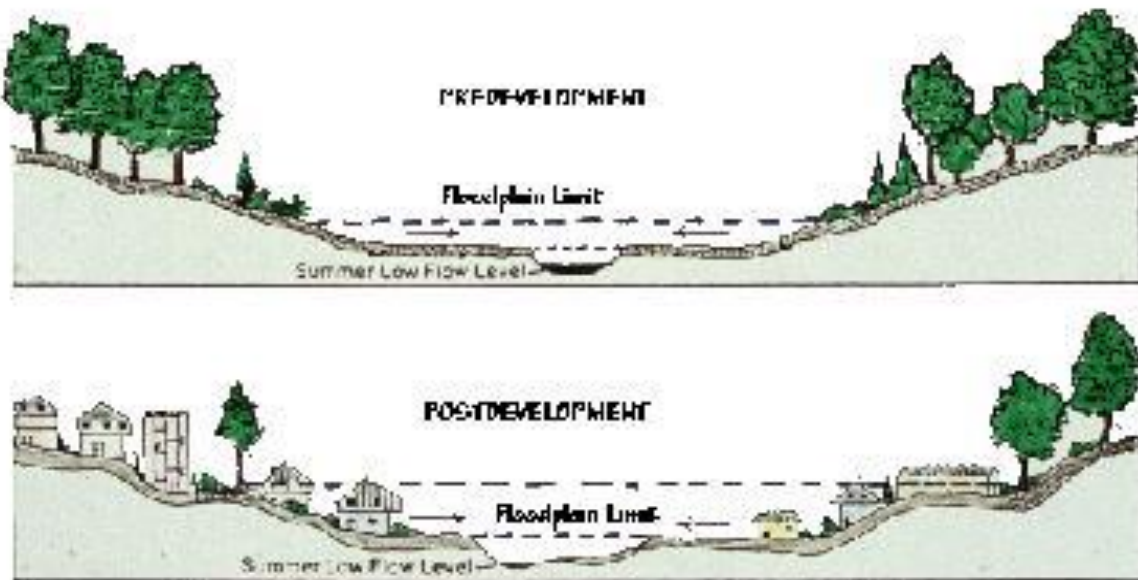


## The Stream and Its Floodplain Before and After Development

(Revised: September 1999)

This figure illustrates how upstream development can widen the floodplain limit.

### Response of Stream Geometry



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At 8%-10% impervious cover in the watershed / drainage area of the stream, while the stream is still relatively stable, changes in the stream shape become more visible. Signs of stream erosion, more eroded material in the banks, and debris become more evident.

At approximately 10% impervious cover, the stream is slightly more visibly impacted. The stream has approximately doubled from its original predevelopment size and evidence of changes includes downcutting, exposed tree roots, and loss of the pool and riffle structure.

Active erosion becomes much more evident at 20% impervious cover with decreased substrate quality due to more material "flushing" through the system.

At 30% impervious cover, the stream structure becomes effectively blown out. The large amount of impervious cover has increased the size of the stream five- to ten-fold. Sanitary sewer manholes, originally in the floodplain, are near or in the stream channel and an indicator of the degree to which channel erosion has occurred.

Not only can a stream widen, but given the right soil conditions, it can cut down as well. The stream bottom may drop several feet in elevation because of the increased



stormwater flows, and the forested wetland in the floodplain is now hydraulically disconnected from the stream that sustained it.

**Floodplain.** That land typically adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation including detached special flood hazard areas, ponding areas, etc. The floodplain is also known as the special flood hazard areas (SFHA).

**Grassed Swales.** A shallow channel or depression planted with vegetation commonly used in highly developed areas. The storm runoff collects in the swale and natural sedimentation removes the pollutants.

**Green Roofs.** Rooftops that have been spread with topsoil and planted with vegetation. These have been used in large urban areas for centuries to reduce the amount of runoff from roof tops.

**Groundwater.** Water that is located within soil or rock below the surface of the earth. Same as subsurface water.

**Impervious.** Surfaces that cause the majority of rainfall to be converted to direct runoff. Asphalt, concrete and roofing systems are considered impervious.

**Infiltration Basin.** Man made basins planted with hardy vegetation that collects storm water and uses natural sedimentation to remove pollutants. The water will normally drain within 24 to 48 hours.

**Infiltration Planters.** Man made raised areas planted with vegetation to act as strip filters for parking lots, sidewalks and other paved urban areas. They are commonly seen around large buildings. **Raised planters should not be placed in a drainage path.**

**Infiltration Trenches.** Man made excavations that are lined with filter material. The trench holds and filters the storm water until it eventually seeps into the surrounding soil. These are used in areas when the natural soil doesn't drain that quickly.



**Natural/Native Vegetation.** This is a method of planting natural grasses and other vegetation to reduce and slow runoff and trap sediment.

**Pervious Pavement.** Pervious or porous pavement, when properly maintained can remove from 65% to 95% of pollutants and sediments. Maintenance involves making sure the holes don't get clogged.

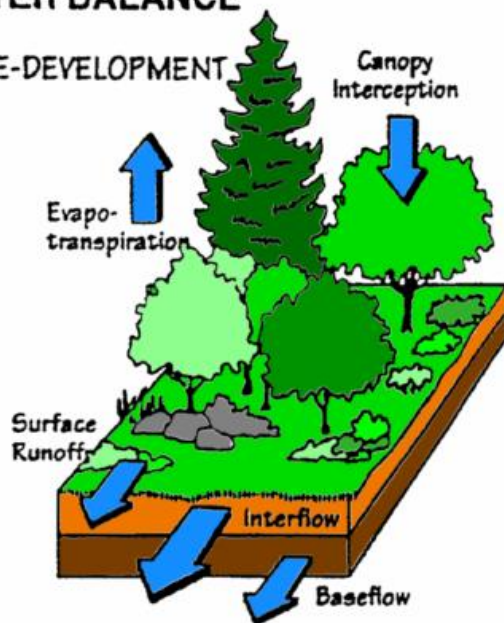
**Rain Barrels.** Rain barrels are used to collect runoff from roofs and downspouts and can be used later by home owners to provide water for gardens, lawns and flower beds. This method does not remove pollutants and sediments will have to be removed periodically from the barrel or cistern.

**Rain Garden.** A rain garden is a small depression planted with native wetland and prairie vegetation designed to collect stormwater runoff and encourage infiltration.

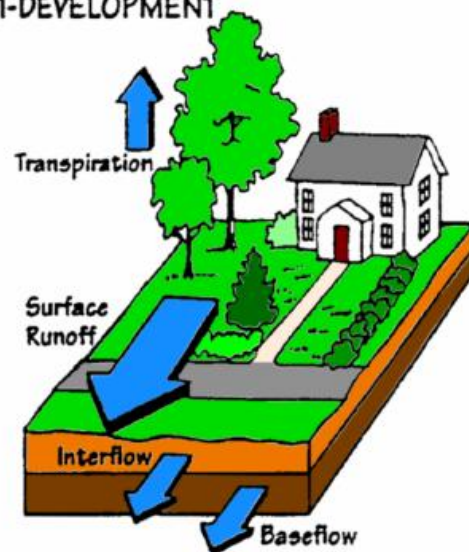
**Runoff.** The waters derived from melting snow or rain falling within a tributary drainage basin that exceeds the infiltration capacity of the soils of that basin.

## WATER BALANCE

### PRE-DEVELOPMENT



### POST-DEVELOPMENT



**Seasonal High Groundwater Table.** The upper limits of the soil temporarily saturated with water, being usually associated with spring wetness conditions.

**Sedimentation.** The process that deposits hydraulically moved soils, debris, and other materials either on other ground surfaces or in bodies of water or stormwater drainage systems.

**Stormwater Facility.** All ditches, channels, conduits, bridges, culverts, levees, ponds, natural and man-made impoundments, wetlands, riparian environment, tile, swales, sewers, or other natural or artificial structures or measures which serve as a means of draining surface and subsurface water from land.

**Water Table.** The upper limit of a free water surface in a saturated soil or underlying material.

**Wetland:** Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Under normal conditions, the area will have present hydrophytic vegetation, hydric soils, and hydrology to be classified as a wetland. Classification of areas shall follow the U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1.





# Stream Buffers --

## Residential Property Owner's Responsibilities

*For New Construction of decks, pools, structures, building additions,*

*And / or land disturbing activities on residential property.*

It shall be the responsibility of the owner and the contractor for the proposed construction of a building addition, pool, deck, or other structure, or land disturbance, to ensure compliance with City Ordinances. If a Building Permit is issued and the City Inspector determines that the construction is within the stream buffer, a STOP WORK ORDER will be issued. The Building Permit may be revoked if the land disturbance is within the buffer, and all construction must be removed. Other penalties and actions which may be taken by the City are found in Section 10 of the Stream Buffer Ordinance. A subdivision plat may have been approved in the past with lesser stream buffers shown. Please review Section 5.2 Variance Procedures (1) through (6) available from Public Works.

However, all new construction after the effective date of October 11, 2006 must comply with the ***City of Marietta Stream Buffer Protection Ordinance***. It states:

*"It is the purpose of this Ordinance to protect the public health, safety, environment and general welfare; to minimize public and private losses due to erosion, siltation and water pollution; and to maintain stream water quality by provisions designed to:*

- (1) Create buffer zones along the streams of the City of Marietta for the protection of water resources; and,*
- (2) Minimize land development within such buffers by establishing buffer zone requirements and by requiring authorization for any such activities."*

Section 5 of the Ordinance discusses Buffer and Setback requirements:

- "(1) An undisturbed native non-invasive buffer shall be maintained for 50 feet, measured horizontally, on both banks as applicable) of the stream flow or wave action from the banks of the stream. In the Event of removal of a buffer area same shall be immediately replaced with native non-invasive vegetation.*
- (2) An additional setback shall be maintained for 25 feet, measured horizontally, beyond the undisturbed native non-invasive vegetative buffer, in which all impervious cover shall be prohibited. Grading, filling and earthmoving shall be minimized within the setback."*

At no time may land disturbance or fill placement be within the State Mandated 25' stream buffer without a variance from GA EPD or it is exempt under the City Ordinance.

The Ordinance applies to all land development activity on property containing a stream protection area (“*the combined areas of all required buffers and setbacks applicable to such stream.*”), or “State Waters”\* as defined by City Code and the Official Code of Georgia (O.C.G.A.) 12-7-1 et seq. Any land development / land disturbance activity within a buffer or any impervious cover within a setback is **prohibited** unless a variance is granted under the conditions in the Ordinance. The Ordinance is based upon the Model Ordinance issued by the Metropolitan North Georgia Water Planning District (MNGWPD), for all Metro-Atlanta communities.

\* Per City Ordinance and State Law, “State Waters” are defined: “*Any and all rivers, streams, creeks branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface or subsurface water, natural or artificial, ..... .*”

“***Stream*** means any State Waters as defined in the O.C.G.A. Annotated which has a drainage area of 25 acres or more.”

Please see next page, “*Marietta Stream Protection*”, for additional information.

It shall be the responsibility of the owner and the contractor for the proposed construction of a building addition, pool, deck, or other structure, or land disturbance, to ensure compliance with City Ordinances. If a Building Permit is issued and the City Inspector determines that the construction is within the stream buffer, a STOP WORK ORDER will be issued. The Building Permit may be revoked if the land disturbance is within the buffer, and all construction removed. Other penalties and actions which may be taken by the City are found in Section 10 of the Stream Buffer Ordinance. At no time may land disturbance or fill placement be within the State Mandated 25’ stream buffer without a variance from GA EPD or is exempt under the City Ordinance.

Stabilization of the stream buffer shall be in accordance with the “*Cobb County Stream Buffer Revegetation Guidelines*”, issued March 2006 by the Cobb County Soil and Water Conservation District. It is NOT sufficient to stabilize with grass seed and mulch, unless authorized by the City of Marietta Public Works Director.

Additionally, work within the FEMA Flood Plain, as determined by the most current (December 16, 2008) Flood Insurance Rate Maps (FIRM), shall require review and approval by the City Engineer and Public Works Director and be guided by the City’s Flood Damage Prevention Ordinance. Dependent upon the proposed encroachment into the flood plain, FEMA approval may be required as a part of the plan review process.

# Marietta Stream Protection

## *Guidelines for the Residential Property Owner*

### **Maintaining Stream Buffers Streamside Property Owners Responsibilities**

Property owners with streams or open *channels* (drainage ditches) are faced with many, often unexpected, challenges and responsibilities. Included are increased maintenance, bank erosion, and pollution prevention concerns. Major tasks for these owners are to maintain the buffer of deep-rooted vegetation along the stream, and to remove any litter or debris before it effects the downstream community. Taking these actions lessens the adverse impact of polluted runoff to the downstream neighbors.

The *stream buffer* is the protective natural area of vegetation adjacent to the stream channel. An effective stream buffer starts at the top of the bank and extends at least 50 feet from the stream channel. The buffer protects the stream by slowing high water flow, absorbing and filtering pollutants, trapping sediment, and stabilizing streambanks. Ideally, the stream buffer consists of upper story (tall trees like Pine, Poplar, Oak, Maple), under story (smaller trees like Alder, Dogwood, Birch) and ground vegetation composed of a wide variety of native shrubs, trees, and grasses. Within the stream channel, the buffer provides shade, habitat, and nutrition for in-stream organisms. Streamside property owners can improve local water quality by ensuring the stream buffer remains healthy.

Breaks in the stream buffer are a common problem that impact streams. Homeowners frequently prevent the establishment of streamside vegetation by manicuring their lawns to the edge of the stream. This practice allows pesticides, fertilizers, pet waste, and sediment to run off the property and reach the stream unimpeded. The shallow roots of grass are inadequate to protect the bank from erosion. Loss of natural vegetation is directly linked to property loss.

Without deep-rooted materials holding the bank soils, stream banks will erode every time it rains. Increased stream flow will wash the soils away and increase the rate of property loss along the streamside.

To keep the stream healthy and retain your land, plant native vegetation such as river birch along the stream and allow an undisturbed stream buffer to exist.

### **Activities that can NEGATIVELY impact stream health**

- Dumping of yard debris, concrete or rocks on stream banks and in streams
- Disturbing land within the stream buffer

- Draining roof or lawn runoff directly into the streams via piping
- Spraying chemicals (pesticide, herbicide, fertilizer) in the stream buffer
- Removing native vegetation within the stream buffer
- Over-applying chemicals on lawns, gardens, and flower beds
- Storing materials in the stream buffer
- Building structures in the stream channel
- Altering the normal course of stream flow
- Modifying stream banks to provide access to the stream channel
- Installing patios, beaches or relaxation areas, pools, etc. along the stream
- Allowing chemicals, such as those used in swimming pools in the stream
- Washing your car and allowing the wash water to reach a storm drain or stream

### **Activities that can IMPROVE stream health**

- Allow stream buffer area to grow naturally
- Plant additional vegetation along the stream buffer
- Pick up pet waste and dispose in the garbage
- Apply appropriate chemicals at correct volumes for pest control to the manufacturer's recommendations
- Store materials in secure locations away from the stream
- Install a rain garden and rain barrels to collect household rainwater
- Use a mulching mower, letting clippings fall instead of bagging
- Compost yard debris (away from stream bank)
- Mulch or plant bare earth on your property
- Remove litter and downed trees from the stream
- Enjoy the stream using passive recreation measures



## **Protecting Stream Health on Your Property**

Streams play many important roles in our environment, including wildlife habitat, recreation, and source water. It is vitally important that those living along the water understand their role and responsibility in protecting this resource. The flowing water in the stream belongs to the State of Georgia. However, the citizen owns the land beneath the flowing water and along the banks. Since this is private property, responsibility for debris removal is left to the private property owner. Most debris found in local streams is from roadside litter transported to the stream through the storm drain system. Help prevent littering in the community by educating your neighbors about this ongoing problem. Many subdivisions and homeowner associations organize regular community clean-up events to help beautify the area and remove any litter. The Keep Marietta Beautiful organization supplies bags and gloves for stream clean-up projects upon request.

Marietta, Cobb County streams are home to a diverse population of organisms. The variety of features within the stream serve as habitats for various animals living in the stream. Woody debris in the stream channel is a vital habitat for stream fauna. These snags are home to many species of fish, crayfish and insects living in the stream.

### ***Enjoy the Stream without Impact***

It's possible to enjoy a beautiful yard and a healthy stream. Enhance the natural setting by widening the stream buffer with attractive vegetation. Use plants that attract hummingbirds and butterflies to your streamside habitat. Native trees, shrubs, and grasses will compliment your patio or deck and add value to your home.

Remember, any alteration of the stream bank or impeding the flow of water will most likely lead to additional erosion. Streams are dynamic systems, changing over time with the flowing water. If there is an erosion problem along your stream segment, the best thing to do is stabilize the banks with native vegetation.

The above information was adapted from the Cobb County publication "Cobb County Stream Protection", July 2005. If you are fortunate enough to live streamside, you may be interested in learning more about the ecology of streams. Contact the Adopt-A-Stream Program or City of Marietta for further information on stream health.

Cobb County Adopt-A-Stream  
Cobb County Water System  
Water Protection Division  
Adopt-A-Stream Coordinator  
662 South Cobb Drive

Marietta, Georgia 30060

Phone: (770) 528-1482

Fax: (770) 528-1483

## Help keep Marietta's streams clean by preventing residential pollution

For more information contact:

**City of Marietta Department of Public Works, Engineering Division**

205 Lawrence Street, 2<sup>nd</sup> Floor

Marietta, GA 30060

**Daniel J. Conn, P.E.**

Public Works Director

770-794-5658

**James A. Wilgus, P.E.**

City Engineer & Asst Public Works Director

770-794-5658

**Richard E. King, CPSS, CPESC**

Civil Engineer

770-794-8110

**NOTE: If a discrepancy is found between this document and City Ordinance, the City Ordinance shall govern.**

